



MOBILE CRIMP® 4-20
Positive Stop Control

SAFETY & OPERATING MANUAL

Carefully read and understand all the following warnings before operating this crimper

WARNING!

An incorrect hose assembly can rupture or blow apart in use, resulting in serious injury, death, or property damage.

REMEMBER: Others depend on you to make correct assemblies.

FOR SAFETY'S SAKE

USE THIS MACHINE ONLY IF YOU:

1. Receive hands-on TRAINING with the MobileCrimp® and assemblies.
2. Follow current **GATES OPERATING MANUAL** and **CRIMP DATA** for the **MobileCrimp 4-20**.
3. Use only **NEW (UNUSED) GATES** hose and fittings.
4. Wear **SAFETY GLASSES**.
5. Keep hands clear of moving parts.
6. **DO NOT** operate pump **UNLESS** cylinder is locked in crimp position.
7. To avoid risk of injury, **DO NOT** use crimper **UNLESS CONTROLLER BASE PLATE** is in place.
8. **DO NOT** operate crimper in horizontal position.

Digital Dial Control

Prod. No.: 7480-0050, Part No.: 77420

Dimensions: 12 1/4" wide x 6 1/4" deep x 19 1/2" high

Weight: 57 lbs. [with stand]

Pump Specifications

All pumps maximum rated working pressure: 10,000 psi

Shop Air Pump

Prod. No.: 7481-0002, Part No.: 77820
Weight: 10 lbs.

1/4 H.P. 12 Volt DC Pump

Prod. No.: 7481-0037, Part No.: 77439
Weight: 20.5 lbs.

1/2 H.P. 115 Volt AC Pump

Prod. No.: 7481-0034, Part No.: 77441
Weight: 32 lbs.

Hand Pump

Prod. No.: 7481-0006, Part No.: 77821
Weight: 25.6 lbs.

1/4 H.P. 115 Volt AC Pump

Prod. No.: 7481-0033, Part No.: 77440
Weight 20 lbs.

1-1/2 H.P. 115 Volt AC Pump

Prod. No. 7481-0035
Weight: 108 lbs.



Serial No. _____
[Located on front top of cylinder]

Date of Purchase _____

Contents

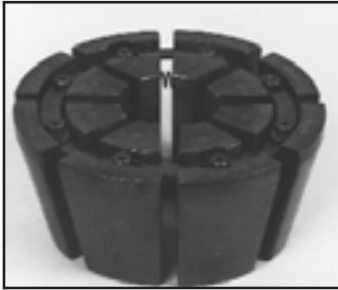
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IDENTIFICATION LIST



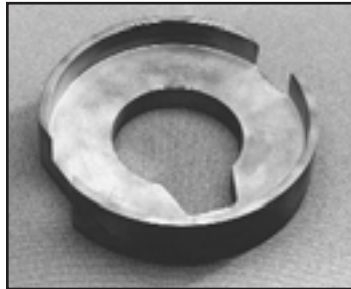
Spacer Rings



Die



Molykote and Brush



Pressure Plate



Crimper



Stand



Hose Assembly



Clamps



Literature Packet



Magnet

SET UP

1. Unpack carton.

- > Remove crimper, pressure plate, nylon-covered hose assembly, literature envelope, magnet, .05 Allen wrench, and Molykote lubricant from shipping carton.
- > Locate the serial number assigned to the crimper on the top front of the cylinder and record on page one for future reference.

2. Attach crimper to the stand.

- > Place crimper on flat, well-supported surface [such as the top of a workbench or the bed of a service vehicle] with the handle to the right.
- > Remove two knobs, flat washers, and spacer from the crimper pivot bolts.



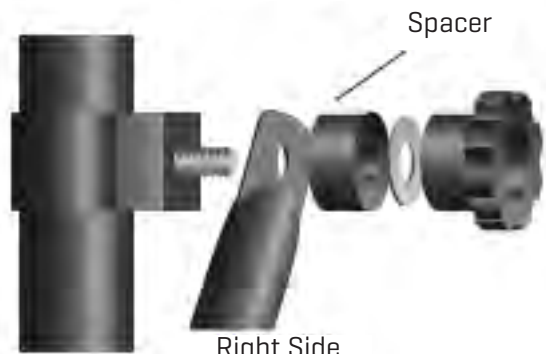
- > Slide the two halves of the stand together and attach to the crimper at the pivot bolts.



- > Replace spacer, flat washer, and knobs. Do not tighten knobs.



Left Side



Right Side

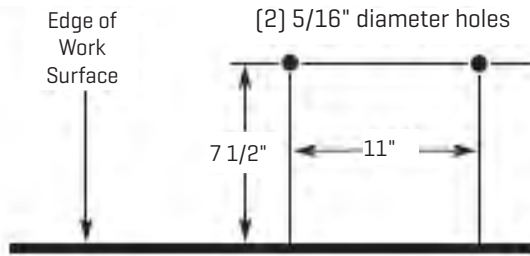
- > Lift crimper and allow stand to swing down onto the surface. Tighten knobs.



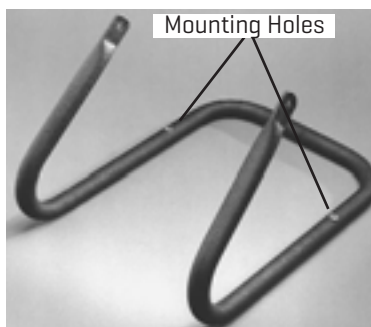
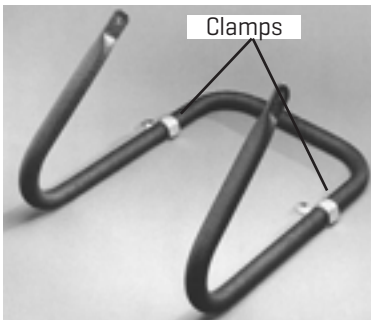
3. Fasten crimper to work surface station

before use [to avoid damage to machine or personal injury because an unsecured machine can fall].

- > Position crimper so that mounting holes are approximately 7" to 8" from the edge of the work surface.
- > Mark the drilling location using the mounting holes as a guide [see illustration below]



- > Drill two 5/16" diameter holes then use mounting holes or clamps to fasten stand to work surface.



THINK SAFETY!

To avoid damage to the machine ALWAYS fasten the crimper to the work surface before you attempt to crimp.

4. Attach pump to crimper.

- > Place pump near crimper and connect hose assembly to the pump port [3/8" NPT threads]. Pipe sealant may be used to seal connection. [For best connection, use Gates' Quick Disconnect couplings, G95311-0606 and G95321-0606, sold separately.]



- > Connect opposite end to the adapter or crimper



5. Check pump oil level.

- > Pump comes with oil in reservoir. Check proper oil level per pump operating manual instructions or the Maintenance section of this manual.

6. Connect pump to power outlet.

- > For 115V connection, plug power cord into a properly grounded and rated circuit. For vehicle battery connection, see pump operating manual [see inside cover for circuit requirements].

SET UP

7. Bleed air from system.

- > Tilt crimper forward so adapter is at its highest point.



- > Turn pump on by pressing and holding the power "on" switch, [see pump operating manual for switch location] which extends the ram.



- > Extend the ram approximately 1". Release "on" switch allowing ram to fully retract.
- > Repeat a minimum of five [5] times to bleed air completely.

CAUTION

Keep away from all moving parts!
If bodily contact with a moving part occurs, immediately release the pump power "on" switch.

8. Place crimper in comfortable working position.

- > See photo below for suggested working position.



IMPORTANT

Do not operate crimper in horizontal position because dies will become unstable.

THINK SAFETY

NOTE: It's a good idea to place a rubber mat on the floor near the crimper to reduce the chance of damaging a die if dropped and improve operator comfort.

- 1.** Before crimping a hose assembly, check calibration. Calibration is the proper relationship between a setting and the crimp diameter. It should be checked at least monthly, possibly weekly or daily, if crimper has been used heavily or abused.
- 2.** Place the MC die set into the die cone and install pressure plate.



- 3.** Turn the knob to a setting of 245.



Note: Rotating the knob on front of switch box clockwise will increase the number; counter-clockwise will decrease the number. When changing the setting, always move to a higher number then down to the desired setting. [Ex: To change from 200- 245, move dial up to 300 then down to 245.]

- 4.** Insert an 8G MegaCrimp® coupling into the die set.



- 5.** Complete the crimp.

- 6.** Remove the coupling and measure the crimp diameter, which should measure 1.000 +/- .003". To properly measure crimp diameter, refer to the Measuring and Adjustment Diameter sections of this manual.

- > If diameter is within range, no adjustment is necessary. If the crimp diameter is not within this range the crimper must be calibrated.
- > To get a larger or smaller number adjust accordingly.
 - > For every .001" change in crimp diameter, change the setting by .002. For example, to increase the crimp diameter by .002", increase your setting from 245-247.

- 7.** Turn the knob to this new setting and crimp a new coupling. After the correct diameter is achieved, pull the plastic cap from the knob.



- 8.** Loosen the two set screws in the brass knob 1/4 to 1/2 turn using a .05" Allen wrench.



- 9.** Turn the brass knob either clockwise or counterclockwise to get the setting back to 245.



- 10.** Tighten the set screws and replace the plastic cap. Crimper is now calibrated.

HOSE PREPARATION

MegaCrimp® Couplings

CAUTION

A new hose and end fittings must be used when building a hose assembly. Re-using any components will seriously affect performance and could result in serious injury or property damage.

- 1.** Cut hose to desired length.
- 2.** Using Gates Crimp Data Chart [#35019 [Ind], 428-7365 [Auto]], select the correct coupling or visit our website to download our electronic program at www.gates.com/ecrimp.
- 3.** Place a visible mark on hose cover at the insertion length shown on the crimp data



- 4.** Insert coupling into the hose until the mark lines up with the end of the coupling ferrule.



- 5.** Hose and coupling are now ready for crimping.



HOSE PREPARATION

GlobalSpiral™ Two-Piece Couplings

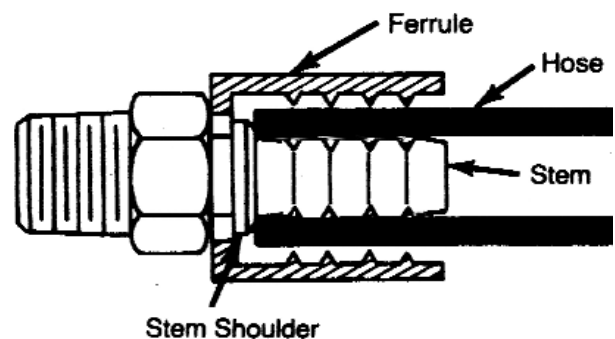
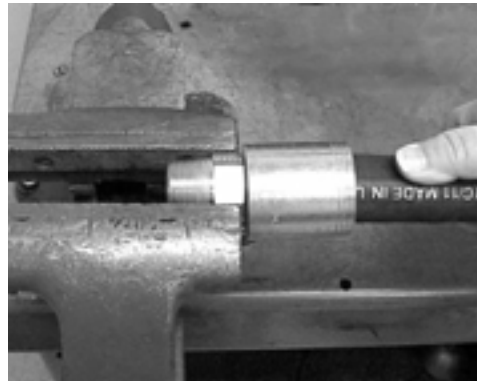
CAUTION

A new hose and end fittings (stem/ferrule) must be used when building a hose assembly. Re-using any components will seriously affect performance and could result in serious injury or damage.

1. Cut hose to desired length.
2. Using Gates crimp data chart [#35019 [Ind], 428-7365 [Auto]], select the correct coupling or visit our website to download our electronic program at www.gates.com/ecrimp.
3. Place ferrule over the end of the hose.
4. Lubricate the first two or three serrations on stem with lightweight oil [SAE 10W].
5. Clamp stem in vise on hex portion, and push hose onto stem.



- > Hose should be flush against stem shoulder [see cutaway drawing below].



6. Hose and coupling are now ready for crimping.

OPERATING INSTRUCTIONS

1. Select correct die set.

- > Using Gates Crimp Data Chart [#35019 [Ind] 428-7365 [Auto]] or ECrimp, select correct die set for the hose and coupling being crimped.

Hydraulic Hose Crimp Data MCU--20 Digital Dial and Positive Stop Crimpers

Die	Die	Series	Stroke	Die	Die	Die	Die	Die	Die	Die	Die	Die	Die	Die	Die
Part No.	Part No.	Part No.	Part No.	Part No.	Part No.	Part No.	Part No.	Part No.	Part No.	Part No.	Part No.	Part No.	Part No.	Part No.	Part No.
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9
10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10

Die Set

2. Lubricate and load die. Swing cylinder to "die loading" position.

- > Apply thin layer of Molykote* lube to the inside surface of the die cone. Re-apply lube whenever surface become shiny.



THINK SAFETY

IMPORTANT NOTE: Lubricants should be reapplied to metal-to-metal sliding surfaces whenever the surface becomes shiny. Failure to do this reduces the life of the dies and cone. Excessive wear on these components produces poorly performing hose assemblies that could blow apart and result in injury.

*Use only Gates Molykote lube for proper operation or Gates-recommended grease.

- > Using the magnet, place the die set into the die cone.



- > Remove magnet by lifting the "T" handle, making sure the top of the die fingers are even.



- > Apply a thin layer of Molykote lube to the top of the die set.





OPERATING INSTRUCTIONS

3. Select correct setting.

- > Using Gates Crimp Data Chart [#35019 [Ind], 428-7365 [Auto]] or ECrimp, select correct setting for the hose and coupling being crimped.

Hydraulic Hose Crimp Data MCU-20 Digital Dial and Positive Stop Crimpers

Size	Part	Part	Part	Part	Part	Part	Part	Part	Part	Part	Part	Part	Part
1/2"	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
3/4"	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
1"	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
1 1/4"	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
1 1/2"	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
2"	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
2 1/2"	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
3"	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
3 1/2"	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
4"	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
4 1/2"	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
5"	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000

Setting

- > Settings are approximate and may need to be adjusted. See Measuring and Adjusting the Crimp Diameter.

4. Install spacer and pressure plate.

- > Place the spacer into the pressure plate.



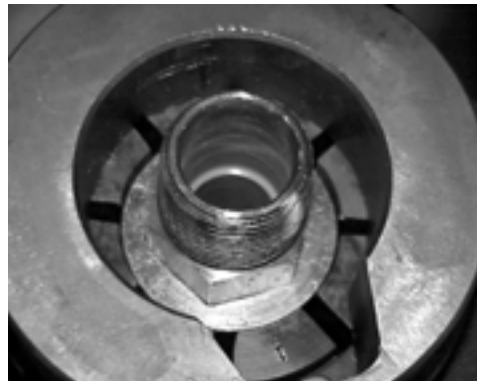
- > Place the pressure plate onto the die set. Spacer must be located between pressure plate and die set.



5. Insert hose assembly from the bottom of the die cone up through the die set.



- > Locate the top of the ferrule approximately 1/16" below the top of the die set.



- > When crimping bent tube and block-style couplings, keep thread end aligned with notch in pressure plate.



IMPORTANT

For GS couplings, make sure the top of the ferrule rests against the hex or round shoulder of the coupling.

OPERATING INSTRUCTIONS

6. Swing cylinder into crimping position.

Using the handle, swing cylinder toward you and lock into place with lock pin.



- > Make sure cylinder is locked into position by placing lock pin into hole on top of cylinder.



IMPORTANT

Serious injury and/ or crimper damage can result if the cylinder is not locked in its crimp position.

- ## 7. Begin the crimp.
- Start by steadying hose with one hand while pressing and holding the power “on” switch with the other hand, which extends the ram [see pump operation manual for switch location].



CAUTION

Keep away from all moving parts! If bodily contact with a moving part occurs, immediately release the pump power “on” switch.



Incorrect



Correct

- > When pressure plate contacts the top of the die cone, release the power “on” switch. Crimp is now complete.

8. Remove hose assembly.

- > While holding hose, lightly lift bottom of die set to release hose assembly.
- > Remove hose assembly.





MEASURING AND ADJUSTING CRIMP DIAMETER

NOTE:

DO NOT measure on top of part number stamps.

1. Measure the crimp diameter.

> When using 21 and 22 dies.

> Using "21/22" dial calipers (Product No. 7369-1320, Part No. 78217) measure half way between ridges (Fig. 1). To be sure crimp diameter is being properly measured, mark a crimp flat. Beginning with that flat, count 9 flats to get the diameter. Be sure caliper blades DO NOT touch ridges. [See

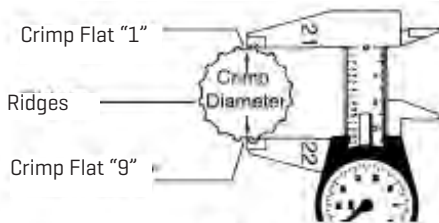


Figure 1

> Measure halfway between the ends of crimped portion of the ferrule (Fig. 2).

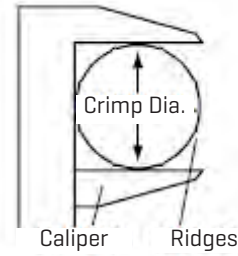


Figure 2

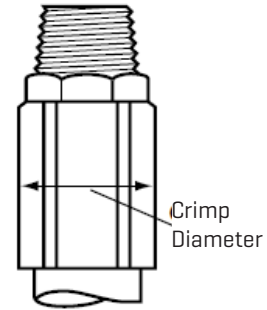
When **NOT** using 21 and 22 dies use Gates dial calipers (Product No. 7369-0320, Part No. 78215) which are notched to clear ridges, measure halfway between ridges (Sketch 1). Be sure caliper fingers DO NOT touch ridges or part number stamps. [See Photo 1]



Photo 1



Sketch 1



Sketch 2

> Measure halfway down the crimped portion of the ferrule (Sketch 2).

2. Check crimp diameter.

> The measured crimp diameter must be within 0.010" of the published crimp diameter. If not, the hose assembly cannot be used, and adjustment will be required.

3. Adjust the crimp diameter (if necessary).

Check top of die set and the surfaces of the pressure plate for any debris (metal chips, dirt, etc.). Debris may cause some variation in crimp diameter.

4. Multiple crimps. When crimping multiple assemblies check every tenth crimp to ensure diameter is within acceptable range (+/- 0.010").

MAINTENANCE

This crimper requires minimal maintenance. However, the following practices are recommended to ensure maximum reliability and service.

Lubricate

- > Using the small brush and Molykote, apply a light coat to the inside surface of the die cone whenever it becomes shiny.

Check oil level

- > Check the hydraulic oil level in the pump reservoir after each 10 hours of use [see pump operations manual for instructions].
- > The oil is more than 1/2" below the top, add a high-grade hydraulic oil, such as Mobil DTE 25, until within 1/2" of the top of the reservoir.

Change the oil

NOTE: Frequency depends on the pump's general working conditions, severity of use, and overall cleanliness.

- > For general shop conditions, change oil every 300 hours. For field/ mobile conditions, more frequent changes are required.
- > Drain, clean, and refill the reservoir per pump operating instructions with a high-grade hydraulic oil, such as Mobil® DTE 25 until within 1/2" of the top of the reservoir.

Inspect die sets and pressure plate & spacers

- > Periodically inspect the surfaces of die sets and pressure plate & spacers for debris [metal chips, dirt, etc.] or damage
- > If debris is present, clean and lightly lubricate. If damaged, replacement is required [see parts list for ordering information].

- > Inspect the die links, springs, and shoulder screws monthly to see if they are broken, cracked, or missing. These conditions may affect crimp quality. Replace if necessary.

Inspect hose assembly

- > Inspect hose assembly connecting the crimper and pump monthly [more often with severe use].
- > Check nylon sleeve for cuts for abrasions. If sleeve is damaged, check hose for damage. If hose has signs of damage, replace immediately. A damaged hose may rupture and cause serious injury.
- > If hydraulic oil is present on the hose assembly, serious damage may exist. Replace immediately.

Calibration.

- > None required.

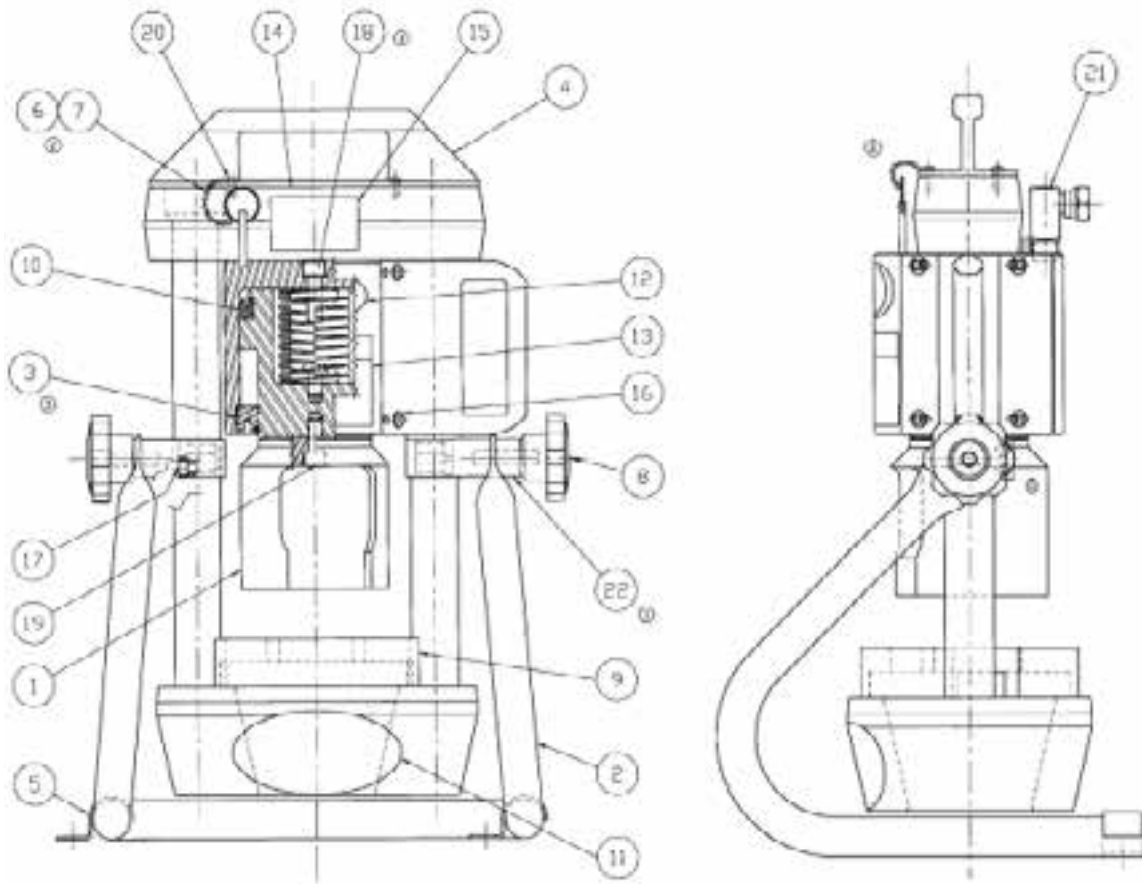


TROUBLESHOOTING

All equipment is tested for proper performance before it is shipped from the factory. However, if you experience any difficulties, check the list below to help restore equipment to proper operating standards.

Problem	Correction
> Ram will not fully extend	> Check hydraulic oil level in pump reservoir. > Hydraulic oil temperature must be within +40 and +120 degrees F.
> Ram will not retract	> Unplug pump from electrical outlet. [WARNING: pump must be unplugged to avoid injury.] > Slowly and carefully loosen hose at pump. Be prepared to catch oil as it escapes. If ram retracts, pump valve may be stuck or need replacement.
> Pump motor will not start.	> Check electrical connections.
> Setting will not change	> Lock switch may be engaged. Move switch to the left.
> Light and buzzer do not work.	> Replace the controller batteries. See maintenance section. > Replace controller.

REPLACEMENT PARTS



Standard Items				
Item No.	Prod. No.	Part No.	Description	Quantity
1	7482-1036	78437	Pusher	1
2	7482-1005	78455	Stand	1
3	7482-1190	78425	Retaining Ring Kit	1
4	7482-1163	78420	Handle	1
5	7482-1109	78459	Stand Clamp	2
6	7482-1064	78421	Lock Pin	1
7	7482-1165	78422	Chain, Lock Pin	1
8	7482-1015	78465	Digital Dial Pressure Plate	1
9	7482-1041	78440	Seal Kit	1
10	7482-1171	78397	Digital Dial Controller Assembly	1
11	7482-1168	78424	Cable Assembly, DD Controller	1
12	7482-1012	78462	Pivot Knob	2
13	7482-1097	78442	Knob, Digital Dial	1
14	-	35032-D	Cone Plate Decal	1
15	-	35032-G	Gates Decal	1
16	-	35032-DA	Cylinder Warning Label	1
17	-	35032-DB	Top Plate Warning Label	1
18	-	35032-W	Machine Damage Warning Label	1
19	-	-	Button Head Cap Screw, 1/4-20 x 3/8	4
20	-	-	Socket Head Cap Screw, 1/4-20 x 3/4	4



REPLACEMENT PARTS

Standard Items				
Item No.	Prod. No.	Part No.	Description	Quantity
21	-	-	Socket Head Cap Screw 3/8-16 x 1-1/4	1
22	-	-	Socket Head Cap Screw 3/8-16 x 3/4	2
23	-	-	Button Head Cap Screw, 10-32UNF x 3/8	1
24	7259-02165	GC0144-0606	Adapter, 6MP-6FPX90, Gates	1
25	7482-1006	78456	Pivot Spacer	1
26	7482-1172	78398	Cover, DD Controller	1
*	7482-1017	78467	Hose Assembly, 4 ft.	1
*	3663-6922	78429	Hose Assembly, 8 ft.	1
*	7482-1000	78450	Magnet	1

Optional Items			
Prod. No.	Part No.	Description	Quantity
7482-1131	78468	MC 31 Die Set Assembly	-
7482-1220	78558	MC 21 Die Set Assembly	-
7482-1132	78469	MC 32 Die Set Assembly	-
7482-1221	78559	MC 22 Die Set Assembly	-
7482-1133	78470	MC 33 Die Set Assembly	-
7482-1134	78471	MC 34 Die Set Assembly	-
7482-1135	78472	MC 35 Die Set Assembly	-
7482-1136	78473	MC 36 Die Set Assembly	-
7482-1137	78474	MC 37 Die Set Assembly	-
7482-1138	78475	MC 38 Die Set Assembly	-
7482-1139	78476	MC 39 Die Set Assembly	-
7482-1140	78431	MC40 [-6AC] Die Set Assembly	-
7482-1141	78432	MC41 [-8AC] Die Set Assembly	-
7482-1142	78433	MC42 [-10AC] Die Set Assembly	-
7482-1143	78434	MC43 [-12AC] Die Set Assembly	-
7482-1144	78452	MC44 [PS] Die Set Assembly	-
7482-1145	78497	MC45 [GF] Die Set Assembly	-
7483-1147	78396	Die Set, Spring	8
7483-1148	78397	Die Set, Link	8
7483-1149	78398	Die Set, Shoulder Screw	8
7482-1027	78477	Rubber Die Ring	1
7482-1154	78399	Die Box	1
7252-8830-5	G95321-0606	Female Quick Connect Coupler	-
7252-8831-5	G95311-0606	Male Quick Connect Coupler	-
7482-1344	78560	MC71 [GLP] Die Set Assembly	-
7482-1345	78561	MC72 [GLP] Die Set Assembly	-
7482-1356	78562	MC73 [GLP] Die Set Assembly	-
7482-1357	78563	MC74 [GLP] Die Set Assembly	-
7482-1358	78564	MC75 [GLP] Die Set Assembly	-

Two-Year Limited Warranty on Equipment

For two years from the date of shipment of the equipment to the original user, Gates Corporation will, as its option, replace or repair any unit which proves to be defective in material or workmanship, or both, at no cost to the original user of the equipment. This is the exclusive remedy. **THERE IS NO OTHER EXPRESS OR IMPLIED WARRANTY. ALL INCLUDING THOSE OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE LIMITED TO ONE YEAR FROM DATE OF SHIPMENT OF THE EQUIPMENT TO THE ORIGINAL USER. LIABILITY FOR CONSEQUENTIAL AND INCIDENTAL DAMAGES UNDER ANY AND ALL WARRANTIES IS EXCLUDED TO THE EXTENT EXCLUSION IS PERMITTED BY LAW.** Some states do not allow the exclusion of incidental or consequential damages, and some states do not allow limitations on how long an implied warranty lasts, so the above limitations and exclusion may not apply to you. This warranty gives you specific legal rights and you may also have other rights which vary from state to state. For warranty service, contact Service Department, Gates Corporation, 1551 Wewatta St., Denver, Colorado 80202.

How to Order Repair Parts

All Parts for MobileCrimp® 4-20 machine listed in current replacement parts price sheets can be ordered directly from Gates Corporation, Iola Distribution Center, 999 Michigan Ave., P.O. Box 606, Iola, KS 66749, Phone (316) 365-6961.

When ordering, be sure to include the following information:

1. Name of unit shown on front.
2. Product number of parts needed.
3. Description of parts needed.
4. Quantity of parts needed.
5. Serial number of machine.

For selling prices on inventoried parts, refer to Hydraulic Power Crimp Equipment and Parts List Price Schedule. Selling prices for parts not shown in these lists will be furnished on request, or parts will be shipped at prevailing prices and you will be billed accordingly. For information regarding prices, contact your local Gates representative or Sales Customer Service.

When returning inoperable equipment, contact your Gates sales representative and request a return goods authorization form. Fill out and send to:

Gates Corporation
ATTN: Service Department
1551 Wewatta St
Denver, Colorado 80202



Gates Corporation

1551 Wewatta St., Denver, CO 80202